

IN THE CLAIMS:

Please add claims 5-12 as shown.

1. (Original) A vehicle speed measuring apparatus for a vehicle comprising:  
vibration detection sensors for detecting vibrations from a road surface through tires, the  
vibration detection sensors being provided at front and rear wheel sides, respectively;  
an input section through which the vibration detection sensors input their detection values;  
and  
a processing unit for calculating vehicle speed of the vehicle based on a change pattern of  
the detection values inputted, wherein the processing unit in order operates:  
to feature extract a change pattern of the detection values for the respective front and rear  
wheel sides by excluding inherent tire influences on the detection values when the detection values  
are inputted through the input section;  
to execute pattern matching between the front and rear wheel sides on the basis of the  
feature extracted change patterns of the detection values;  
to obtain a time difference from a coincidence of the change patterns; and  
to calculate vehicle speed based on the time difference and a reference distance that is  
previously stored in the vehicle speed measuring apparatus.
2. (Original) A vehicle speed measuring apparatus for a vehicle according to claim  
1, wherein the vibration detection sensors are wheel speed sensors.
3. (Original) A vehicle speed measuring apparatus for a vehicle according to claim

1, wherein the reference distance is a wheel base of the vehicle.

4. (Original) A vehicle speed measuring apparatus for a vehicle according to claim

2, wherein the reference distance is a wheel base of the vehicle.

5. (New) A vehicle speed measuring apparatus for a vehicle according to claim 1, wherein the processing unit further operates to calculate an average vehicle speed over a period of time based on multiple calculated vehicle speeds.

6. (New) A vehicle speed measuring apparatus for a vehicle according to claim 1, wherein the feature extraction operation of said processing unit varies based on vehicle speed.

7. (New) A method of measuring vehicle speed for a vehicle comprising the steps of:  
detecting vibrations from a road surface through tires using vibration detection sensors provided at front and rear wheel sides of a vehicle, respectively;  
feature extracting a change pattern of detection values for the respective front and rear wheel sides as input from said vibration detection sensors by excluding inherent tire influences on the detection values when the detection values are inputted;  
executing pattern matching between the front and rear wheel sides based on the feature extracted change patterns of the detection values;  
obtaining a time difference from a coincidence of the change patterns; and  
calculating vehicle speed based on the time difference and a previously stored reference distance.

8. (New) A method of measuring vehicle speed according to claim 7, wherein the vibration detection sensors are wheel speed sensors.
9. (New) A method of measuring vehicle speed according to claim 7, wherein the reference distance is a wheel base of the vehicle.
10. (New) A method of measuring vehicle speed according to claim 8, wherein the reference distance is a wheel base of the vehicle.
11. (New) A method of measuring vehicle speed according to claim 7, further comprising the step of calculating an average vehicle speed over a period of time based on multiple calculated vehicle speeds.
12. (New) A method of measuring vehicle speed according to claim 7, wherein said feature extraction step is varied based on vehicle speed.